

***FlyBy Math™* Alignment**
Idaho Achievement Standards
Mathematics 2-1-06

Standard 1: Number and Operation

Goal 1.1: Understand and use numbers.

| Objective(s) | <i>FlyBy Math™</i> Activities |
|--|---|
| 9.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation including application in real world situations. (347.01.a) | --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. |

Standard 2: Concepts and Principles of Measurement

Goal 2.2: Apply the concepts of rates, ratios, and proportions.

| Objective(s) | <i>FlyBy Math™</i> Activities |
|---|--|
| 9.M.2.2.1 Use rates, ratios, proportions, and map scales in problem-solving situations. (349.03.a) | --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. |
| 9.M.2.2.2 Apply concepts of rates and direct and indirect measurements. | --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |

Goal 2.3 Apply dimensional analysis.

| Objective(s) | <i>FlyBy Math™</i> Activities |
|---|---|
| 9.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time and temperature. (349.04.a) | --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |

Goal 2.4 Apply appropriate techniques and tools to determine measurements.

| Objective(s) | <i>FlyBy Math™</i> Activities |
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| 9.M.2.4.1 Determine and use appropriate units. (349.01.a) | --Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. |

| Standard 3: Concepts and Language of Algebra and Functions | |
|---|---|
| Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships. | |
| Objective(s) 9.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a) | FlyBy Math™ Activities --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. |
| Goal 3.4: Solve simple linear systems of equations. | |
| Objective(s) 9.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as $x + y = 7$ and $2x + 3y = 21$. (350.04.a) | FlyBy Math™ Activities --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. |
| Goal 3.6: Apply functions to a variety of problems. | |
| Objective(s) 9.M.3.6.1 Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a) | FlyBy Math™ Activities --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. |
| 9.M.3.6.2 Use graphs and sequences to represent and solve problems. (347.02.b) | --Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |

Standard 4: Concepts and Principles of Geometry

Goal 4.4: Represent and graph linear relationships.

| Objective(s) | <i>FlyBy Math™</i> Activities |
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| 9.M.4.4.1 Create graphs and equations for linear relationships. | --Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. |
| 9.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols. | --Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. |
| 9.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts. | --Interpret the slope of a line in the context of a distance-rate-time problem. |

Standard 5: Data Analysis, Probability, and Statistics

Goal 5.1: Understand data analysis.

| Objective(s) | <i>FlyBy Math™</i> Activities |
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| 9.M.5.1.1 Read and interpret tables, charts, and graphs, including scatter plots, broken line graphs, and box-and-whisker plots. (352.01.a) | --Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions. |

Goal 5.2: Collect, organize, and display data.

| Objective(s) | <i>FlyBy Math™</i> Activities |
|--|--|
| 9.M.5.2.1 Collect, organize, and display the data in tables, charts, and graphs. (352.02.a) | --Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs. --Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. |

Goal 5.5: Make predictions or decisions based on data.

| Objective(s) | <i>FlyBy Math™</i> Activities |
|---|--|
| 9.M.5.5.2 Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a) | --Conduct simulation and measurement for several aircraft conflict problems. --Use calculations and experimental evidence to predict, describe, and explain several aircraft conflict problems. |